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**М. В. ВЕГЕРО**

**ENGLISH**  
**READ AND DISCUSS: FORESTRY**

**АНГЛИЙСКИЙ ЯЗЫК**  
**ЧИТАЕМ И ОБСУЖДАЕМ:**  
**ЛЕСНОЕ ХОЗЯЙСТВО**

Практическое пособие

для студентов 1 курса  
специальности 1-75 01 01 «Лесное хозяйство»

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Издание предназначено для обучения студентов 1 курса биологического факультета чтению текстов профессиональной направленности, а также умению общаться на профессиональные темы.

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## Предисловие

Практическое пособие предназначено для совершенствования навыков чтения и говорения на английском языке студентов неязыковых специальностей университета. Предлагаемые аутентичные тексты отражают состояние развития современной науки, а также соответствуют требованиям программы по английскому языку для студентов неязыковых специальностей высших учебных заведений.

Основной целью пособия является развитие у студентов навыков как чтения профессионально-ориентированных текстов, что крайне необходимо современным специалистам, так и общения на профессиональные темы.

Пособие состоит из 9 разделов, каждый из которых включает лексические предтекстовые задания, текст и упражнения для развития лексико-грамматических навыков говорения. Оригинальные тексты по темам разделов, а также комплекс упражнений, входящие в настоящее практическое пособие, отвечают принципам современной коммуникативной методики.

Критерием при отборе текстов служили насыщенность профессионально-ориентированной лексикой и соответствие современному состоянию развития науки.

Активный лексический минимум определяется темами пособия.

# Lesson 1

## What Is a Tree?

### *Active vocabulary:*

to absorb – поглощать  
carbon dioxide – углекислый газ  
oxygen – кислород  
environment – окружающая среда  
harmful – вредный  
ray – луч  
sprout – побег, росток  
to sprout – давать побеги, почки;  
seedling – сеянец; саженец, рассада  
sapling – побег, молодое деревце  
root – корень  
soil – почва  
nutrients – питательные вещества  
trunk – ствол  
branch – ветвь  
bark – кора  
sapwood – заболонь (мягкий молодой слой древесины, находящийся между корой и твёрдой древесиной)  
heartwood – сердцевина дерева, ядровая древесина  
twig – веточка  
needle – иголка  
leaf – (мн. leaves) лист  
capture – захватывать  
by-product – побочный продукт  
release – высвободить, выпускать  
survive – выживать

**Ex. 1. Arrange the words from the *Active vocabulary* into two groups.**

Tree:

Environment:

**Ex. 2. Match the words to make phrases.**

absorb

capture

bark	as a by-product
harmful	harmful rays
plant	twigs and branches
release	in the environment
survive	rays
gather	of a tree
seedling	carbon dioxide

**Ex. 3. Match the words from the *Active vocabulary* to their definitions below:**

- a young plant, especially one raised from a seed and not from a cutting;
- the dense inner part of a tree trunk;
- the soft outer layers of recently formed wood between the heartwood and the bark;
- a young tree, especially one with a slender trunk;
- the part of a plant which attaches it to the ground;
- a part of a tree which grows out from the trunk;
- a slender woody shoot (побег) growing from a branch or stem.

**Ex. 4. Complete the phrases with the words from the *Active vocabulary*.**

1) They absorb ... and give us ... to breathe. 2) Trees make our ... beautiful. 3) Trees like many plants begin from a ... . 4) All trees have ... which absorb water, minerals and ... from the soil. 5) The ... of a tree supports the branches and transports water and minerals from the ... to the rest of the tree. 6) The trunk is covered with a tough outer covering of ... that protects the tree. 7) Branches grow out from the trunk and have ... at the tips. 8) Leaves and needles are arranged (расположены) on the twigs to ... maximum sunlight. 9) All animals and humans need ... to survive. 10) As a ..., trees release oxygen into the air.

**Ex. 5. Read the text.**

Trees are an important part of our daily lives. They absorb carbon dioxide (a greenhouse gas) and give us oxygen to breathe. Trees make our environment beautiful with their different colours, flowers and shapes and they provide us with shade and relief from the sun's heat and harmful rays. Trees help absorb the rain and help stabilize the weather. Trees are very important to us!

## Parts of a Tree.

### Seeds.

Like many plants, a tree begins from a seed. Inside each tree seed is a tree waiting to be born! A seed must have food, water and sunlight to grow. Once the seed sprouts, it grows into a seedling that grows into a sapling and eventually saplings grow into trees that produce their own seeds.

### Roots.

All trees have roots, which extend into the soil and have two important jobs to do: they anchor the tree to the ground so that it can stand upright, and they absorb water, minerals and nutrients from the soil.

### Trunk.

The trunk of a tree supports the branches and transports water and minerals from the soil to the rest of the tree. The trunk supports the tree as it grows taller. In order to reach the sunlight it needs to continue growing. The trunk is covered with a tough outer covering of bark that protects the tree. The layer under the bark is called sapwood and the centre of the trunk is called heartwood. Heartwood is formed as the tree grows and the inner layers of sapwood die and harden. The hardness of heartwood helps support the tree.

In order to find out the age of a tree, count the tree layers or rings on the trunk of a dead tree. The rings are thicker or thinner depending on the temperature and weather that year, as well as other environmental conditions.

### Branches, leaves and twigs.

Branches grow out from the trunk and have twigs at the tips. These twigs are the growing ends of the trees. They also transport water and minerals from the trunk to the leaves and needles.

### Leaves and needles.

Leaves and needles are arranged on the twigs to capture maximum sunlight. Using sunlight the leaves and needles produce food for the whole tree. Leaves use energy from the sun to take the carbon dioxide in the air and use the water from the soil to convert into sugars to feed the tree. This process is known as photosynthesis. As a by-product, trees release oxygen into the air. This is very important, as all animals and humans need oxygen to survive.

## **Ex. 6. Answer the questions.**

1) How are trees very important to us? 2) What are the parts of a tree? 3) What does a tree start with? 4) What stages does a tree undergo as it grows? 5) Why are roots important? 6) What part of a tree supports the branches? 7) What is the trunk covered with? 8) What is the layer under the bark called? 9) How can we find out the age of a tree? 10) What is a twig? 11) Why are leaves important? 12) What do trees release as a by-product?

**Ex. 7. Complete the sentences?**

- 1) Trees make our environment ...
- 2) Trees help absorb ...
- 3) Once the seed sprouts, ...
- 4) Heartwood is formed ...
- 5) The rings of a tree are thicker or thinner depending on ...
- 6) Twigs transport water and minerals from .....
- 7) Using sunlight the leaves and needles ...
- 8) Leaves use energy from the sun to take ...

**Ex. 8. Speak about the parts of a tree.**



## Lesson 2

### Types of trees. Deciduous Trees

#### *Active vocabulary:*

incredible – невероятный  
diversity – разнообразие  
species – вид, виды  
habitat – среда обитания  
to conserve – сохранять  
to maintain – поддерживать, сохранять  
to preserve – сохранять, сберегать  
deciduous – лиственный  
coniferous – хвойный  
broadleaf – широколиственный  
oak – дуб  
maple – клен  
to stand – переносить, выдерживать  
conditions – условия  
bud – почка  
to disperse – рассеивать, распространять  
digestible – удобоваримый, легко усваиваемый  
timber – древесина  
surface – поверхность  
common – распространенный, простой  
to increase – увеличивать

**Ex. 1. Arrange the words from the *Active vocabulary* into three groups.**

1) Nouns; 2) Verbs; 3) Adjectives.

**Ex. 2. Match the words to make phrases.**

incredible	weather conditions
to stand	diversity
preserve	of rare species
the surface	the environment
deciduous	the seeds
habitat	trees
to disperse	of a leaf

**Ex. 3. Match the words from the *Active vocabulary* to their definitions below:**

- the natural home or environment of an animal, plant, or other organism;
- maintain (something) in its original or existing state;
- a class of plants or animals whose members have the same main characteristics and are able to breed with each other;
- tree or bush that loses its leaves in the autumn every year;
- become or make greater in size, amount, or degree;
- a compact knob-like (шишкоподобный) growth on a plant which develops into a leaf or flower;
- wood prepared for use in building and carpentry;
- the outside part or uppermost layer of something;
- impossible to believe.

**Ex. 4. Complete the phrases with the words from the *Active vocabulary*.**

- 1) Trees act as a ... for animal species and micro-organisms.
- 2) There is an ... diversity of tree species around the world.
- 3) It is very important to plant more tree species to maintain their number and ... the environment and the ecosystem.
- 4) Deciduous trees have larger and wider leaves as compared to those of ... trees.
- 5) Two common examples of ... trees are oaks and maples.
- 6) The larger the size of the leaf the greater the ... area for photosynthesis.
- 7) In spring tree ... sprout leaves and the tree begins to grown.
- 8) Deciduous trees are often grown for their highly valued ... .

**Ex. 5. Read the text.**

Trees come in different shapes and sizes. There is an incredible diversity of tree species around the world. They make part of our ecosystem that acts as a habitat for over 140,000 animal species and other micro-organisms. Scientifically trees are very important to both humans and the environment. Therefore it is very important to conserve and plant more tree species to maintain their number and preserve the environment and the ecosystem. Trees are divided into two categories namely deciduous and coniferous trees.

Deciduous trees are sometimes referred to as broadleaf trees because of their leaves. They have larger and wider leaves as compared to those of coniferous trees. They spread out as they grow and they have rounded shapes as compared to conifers. Two common examples of deciduous trees are oaks and maples. Deciduous trees tend to drop their leaves during autumn. This is because the larger the size of the leaf the greater the surface area for photosynthesis and as such the leaf cannot stand certain weather conditions. When summer ends and winter approaches, the leaves of deciduous trees die because the weather is not warm enough for the leaves to survive. This is when we see them turn brilliant red, fiery orange, shimmering yellow, gold and brown every autumn before they fall to the ground.

When the leaves are gone, trees can no longer produce food and so they stop growing during the winter months. Once the temperatures rise in the springtime and there is enough rainfall, tree buds sprout leaves once more and the tree begins to grow again.

The seeds of most deciduous trees are protected by a hard nutshell or fleshy fruit. The seeds are dispersed when the fruits or nuts are eaten by animals. Since the seeds inside the fruit or shell are not digestible, the animal eventually passes them through its droppings often away from the parent tree. This increases the chance for a seedling to grow in an area that is not shadowed by its parent.

Most of deciduous trees are hardwood trees. These trees are predominantly grown for their highly valued timber.

#### **Ex. 6. Answer the questions.**

1) Why are trees important for animals? 2) What two categories are trees divided into? 3) How do deciduous and coniferous trees differ? 4) What are the two common examples of deciduous trees? 5) Why do deciduous trees tend to drop their leaves in autumn? 6) Why do deciduous trees stop growing during winter? 7) How are the seeds of most deciduous trees protected? 8) How are the seeds of deciduous trees dispersed? 9) What are deciduous trees grown for?

#### **Ex. 7. Complete the sentences?**

- 1) There is an incredible diversity of ...
- 2) Trees make part of our ecosystem that acts as ...
- 3) It is very important to ...

- 4) Deciduous trees have ...
- 5) Deciduous trees drop their leaves during autumn because ...
- 6) When the leaves are gone, trees can no ...
- 7) The seeds of most deciduous trees are protected by ...
- 8) The seeds are dispersed ...
- 9) Animals pass seeds away from the parent tree and this increases the chance ...
- 10) Most of deciduous trees are predominantly grown for ...

**Ex. 8. Speak about:**

- 1) The leaves of deciduous trees.
- 2) The seeds of deciduous trees.

## Lesson 3

### Types of Trees. Coniferous Trees

#### *Active vocabulary:*

evergreen – вечнозелёный  
remain – оставаться  
include – включать  
redwoods – красное дерево; секвойя  
pine – сосна  
bristlecone pine – сосна остистая  
resistant – устойчивый  
range – ареал, область распространения  
widespread – широко распространённый  
loss – потеря  
shrub – куст  
cone – шишка  
scale – чешуя  
pollen – пыльца  
fungi – грибы (ед. ч. fungus)  
decompose – разлагать  
nutrients – питательные вещества  
fir – пихта  
spruce – ель  
penetrate – проникать  
canopy – покров, листво́вой полог  
reach – достигать  
fern – папоротник  
herbaceous – травяной  
moss – мох  
liverwort – печёночник, печёночный мох  
lichen – лишайник

**Ex. 1. In the *Active vocabulary* choose the names of the plants that can be found in a pinewood.**

**Ex. 2. Find the odd one out.**

- 1) fern, moss, lichen, liverwort, cone;
- 2) tree, shrub, pollen, fern, moss;

- 3) penetrate, reach, decompose, loss, remain;
- 4) spruce, moss, pine, fir;
- 5) evergreen, canopy, herbaceous, resistant;
- 6) cone, scale, pollen, fungi;
- 7) resistant, widespread, range, evergreen.

**Ex. 3. Match the words from the *Active vocabulary* to their definitions below:**

- an evergreen coniferous tree which has clusters of long needle-shaped leaves;
- the area over which a plant or animal is distributed;
- found or distributed over a large area;
- a woody plant that is smaller than a tree and has several main stems;
- a fine powdery substance, typically yellow, consisting of microscopic grains discharged from the male part of a flower or from a male cone;
- the dry fruit of a conifer formed of overlapping scales;
- a small flowerless green plant that lacks true roots, growing in low carpets;
- a group of tiny plants that looks like moss and grows on the surface of things such as rocks, trees, and walls;
- the uppermost branches of the trees in a forest, forming a more or less continuous layer of foliage (листва);
- make or become rotten;
- a group of unicellular or multicellular spore-producing organisms feeding on organic matter.

**Ex. 4. Complete the phrases with the words from the *Active vocabulary*.**

- 1) The leaves of coniferous trees ... green throughout the year.
- 2) Coniferous trees are strong and ... to different climatic conditions.
- 3) Coniferous trees are ... in Europe and Asia.
- 4) Seeds of coniferous trees and shrubs grow in ...
- 5) All conifers have separate seed cones and ... cones.
- 6) Little light penetrates the thick ... of trees to reach the forest floor.

### **Ex. 5. Read the text.**

These trees are also known as evergreen trees. This is because the leaves of these trees remain green throughout the year and they only drop the old leaves. There are over 600 living species of conifers that include the largest (redwoods) and oldest (bristlecone pines) living things. Coniferous trees grow upwards rather than outward and have a triangular shape. This makes the conifer tree strong and keeps its branches from breaking under the weight of snow. These trees are strong and resistant to different climatic conditions. Conifers have an extensive range, but are found primarily in the Northern Hemisphere, as far north as the Arctic Circle. They can also be found in Central America and South America. Conifers are widespread in Europe and Asia, and several species can be found in Africa. Few are tropical.

The leaves on a coniferous tree are either long, pointed needles or are small, flat scales. The needle-like leaves have a waxy outer coat which prevents water loss in freezing weather and the branches are soft and flexible and usually point downwards, so that snow slides off them. The needles or scales will stay on the tree for several years and fall off gradually. The needles fall to the forest floor and form a thick springy mat. Thread-like fungi help to break down or decompose the fallen needles. These fungi provide nutrients from the decomposed needles back to the roots of the trees. But because pine needles do not decompose easily, the soils are poor and acid.

Seeds of coniferous trees and shrubs grow in cones. When a cone opens its scales, the seeds fall out. All conifers have separate seed cones and pollen cones. These may be borne either on the same tree or on different trees.

Common examples of conifers are firs, spruces and pines and they can be identified by their needles. Firs have short needles with blunt tips. Spruces have four-sided needles that are very sharp and pines have needles that grow in bunches, wrapped together at the base.

Little light penetrates the thick canopy of trees to reach the forest floor. Because of this gloom, only ferns and a few herbaceous plants grow here. Mosses, liverworts and lichens are also found on the forest floor and grow on tree trunks and branches. There are few flowering plants.

### **Ex. 6. Answer the questions.**

1) Why are coniferous trees known as evergreen trees? 2) How many living species of conifers are there? 3) What keeps the branches of conifers from breaking under the weight of snow? 4) Where are conifers found primarily? 5) What are the leaves on a coniferous tree like? 6) Why are the soils of pinewoods poor and acid? 7) How do the seeds of coniferous trees grow? 8) What types of cones do conifers have? 9) What are common examples of coniferous trees? 10) Why do few herbaceous plants grow in pinewoods? 11) What plants can be found on the forest floor?

### **Ex. 7. Complete the sentences?**

- 1) Coniferous trees are known as evergreen trees because ...
- 2) Coniferous trees grow ...
- 3) Coniferous trees are strong and ...
- 4) Conifers are widespread in ...
- 5) The leaves on a coniferous tree are ...
- 6) A waxy outer coat of needle-like leaves helps ...
- 7) Snow slides off coniferous trees because ...
- 8) The needles stay on the tree ...
- 9) The fallen needles on the forest floor are decomposed by ...
- 10) When a cone opens ...
- 11) Seed cones and pollen cones may be borne ...

### **Ex. 8. Speak about:**

- 1) The leaves of coniferous trees.
- 2) The difference between deciduous and coniferous trees.



## Lesson 4

### Forests

#### *Active vocabulary:*

ancient – древний  
arthropods – членистоногие  
horsetail – хвощ  
club moss – плаун  
evolve – эволюционировать, развиваться  
adapt – приспособиться  
gymnosperms – голосемянные  
angiosperms – покрытосемянные  
appear – появляться  
radiate – распространяться  
landscape – ландшафт  
spread – распространяться, разносится  
deforestation – вырубка лесов, обезлесение  
pollution – загрязнение  
biome – биом

**Ex. 1. Arrange the words from the *Active vocabulary* into two groups:**

1) Biology;      2) Ecology.

**Ex. 2. In the *Active vocabulary* find the synonyms to the words below.**

Contamination, old, extend, develop, scenery, arise, accommodate.

**Ex. 3. Match the words from the *Active vocabulary* to their definitions below:**

- a large community of flora and fauna occupying a major habitat, e.g. forest or tundra;
- a plant of a group that comprises those that have seeds unprotected by an ovary (завязь) or fruit;
- cutting down forests;
- all the visible features of an area of land;
- make (something) suitable for a new use or conditions;

- a group of invertebrate animals that includes spiders and others that have a segmented body and external skeleton;
- belonging to the very distant past and no longer in existence;

**Ex. 4. Complete the phrases with the words from the *Active vocabulary*.**

- 1) About 420 million years ago ... plants began to occupy the land.
- 2) Over the millions of years these land colonizers ... to their new habitat.
- 3) The first forests were dominated by giant ... and ferns.
- 4) Human population has increased over the past several thousand years, bringing ..., .., and industrial usage problems.

**Ex. 5. Read the text.**

A forest is a highly complex, constantly changing environment made up of a variety of living things (wildlife, trees, shrubs, wildflowers, ferns, mosses, lichens, fungi and microscopic soil organisms) and non-living things (water, nutrients, rocks, sunlight and air). Trees are the biggest part of this complex community.

About 420 million years ago, during the Silurian Period, ancient plants and arthropods began to occupy the land. Over the millions of years that followed, these land colonizers developed and adapted to their new habitat. The first forests were dominated by giant horsetails, club mosses, and ferns that stood up to 40 feet tall.

Life on Earth continued to evolve, and in the late Paleozoic, gymnosperms appeared. By the Triassic Period (245–208 mya), gymnosperms dominated the Earth's forests. In the Cretaceous Period (144–65m mya), the first flowering plants (angiosperms) appeared. They evolved together with insects, birds, and mammals and radiated rapidly, dominating the landscape by the end of the Period. The landscape changed again during the Pleistocene Ice Ages – the surface of the planet that had been dominated by tropical forests for millions of years changed, and temperate forests spread in the Northern Hemisphere.

Today, forests occupy approximately one-third of the Earth's land area, account for over two-thirds of the leaf area of land plants, and contain about 70 % of carbon present in living things. They have been held in reverence (почитались) in folklore and worshipped in ancient religions. However, forests are becoming major casualties of civilization

as human population has increased over the past several thousand years, bringing deforestation, pollution, and industrial usage problems to this important biome.

**Ex. 6. Answer the questions.**

1) What is a forest? 2) What were the first forests like? 3) What dominated the Earth's forests by the Triassic Period? 4) When did the first flowering plants (angiosperms) appear? 5) How did the landscape change during the Pleistocene Ice Ages? 6) How much of the Earth's land area do forests occupy today? 7) What does the increase of human population lead to?

**Ex. 7. Complete the sentences?**

- 1) A forest is made up of ...
- 2) The first forests 420 million years ago were dominated by ...
- 3) In the late Paleozoic life on Earth ...
- 4) The first flowering plants evolved together with ...
- 5) During the Pleistocene Ice Ages the surface of the ...
- 6) Now forests occupy about ...
- 7) Today forests account for ...
- 8) Now forests are in danger because ...

**Ex. 8. Speak about:**

How forests changed in the course of time.

## Lesson 5

### Types of Forests: Tropical Forests

#### *Active vocabulary:*

community – сообщество

according to – в соответствии с ...

latitude – широта

temperate – умеренный

diversity – разнообразие

average – средний

precipitation – осадки

distribute – распределять

rapid – быстрый, стремительный

be subject to – подвергаться

leaching – выщелачивание

penetration – проникновение

orchid – орхидея

vine – вьющееся или ползучее растение, виноградная лоза

simultaneously – одновременно

story – ярус растительности

**Ex. 1. In the *Active vocabulary* find the synonyms to the words below.**

Undergo, rainfall, liana, fast, in accordance with, variety, usual.

**Ex. 2. Match the words to make phrases.**

annual

person

average

simultaneously

temperate

leaching

to start

climate

rapid

precipitation

distribute

changes

be subject to

unfairly

**Ex. 3. Match the words from the *Active vocabulary* to their definitions below:**

- a plant with complex flowers that are often showy or strangely shaped;

- occur throughout an area or period of time;
- the distance of a place north or south of the earth's equator, usually expressed in degrees and minutes;
- of the usual or ordinary amount, standard, level, or rate;
- a climbing or trailing woody-stemmed plant;
- the action or process of making a way through or into something;
- rain, snow, hail (град) that falls to or condenses on the ground;
- happening in a short time or at a great rate.

**Ex. 4. Complete the phrases with the words from the *Active vocabulary*.**

- 1) Forest biomes are biological ... that are dominated by trees and other woody vegetation.
- 2) Forest biomes can be classified ... numerous characteristics.
- 3) Tropical forests are characterized by the greatest ... of species.
- 4) The ... temperature is 20–25° C.
- 5) Canopy in tropical forests is multilayered and continuous, allowing little light ... .
- 6) Plants such as ... and ... are present in tropical forests.

**Ex. 5. Read the text.**

Present-day forest biomes, biological communities that are dominated by trees and other woody vegetation, can be classified according to numerous characteristics, with seasonality being the most widely used. There are three major types of forests, classed according to latitude: tropical, temperate, boreal forests (taiga)

Tropical forests are characterized by the greatest diversity of species. They occur near the equator, within the area bounded by latitudes 23.5 degrees N and 23.5 degrees S. One of the major characteristics of tropical forests is their distinct seasonality: winter is absent, and only two seasons are present (rainy and dry). The length of daylight is 12 hours and varies little.

Temperature is on average 20–25° C and varies little throughout the year: the average temperatures of the three warmest and three coldest months do not differ by more than 5 degrees. Precipitation is evenly distributed throughout the year, with annual rainfall exceeding 2000 mm.

Soil is nutrient-poor and acidic. Decomposition is rapid and soils are subject to heavy leaching. Canopy in tropical forests is multilayered

and continuous, allowing little light penetration. Flora is highly diverse: one square kilometer may contain as many as 100 different tree species. Trees are 25–35 m tall, with buttressed trunks and shallow roots, mostly evergreen, with large dark green leaves. Plants such as orchids, vines (lianas), ferns, mosses, and palms are present in tropical forests. Fauna includes numerous birds, bats, small mammals, and insects.

Further subdivisions of this group are determined by seasonal distribution of rainfall: 1) evergreen rainforest: no dry season; 2) seasonal rainforest: short dry period in a very wet tropical region (the forest exhibits definite seasonal changes as trees undergo developmental changes simultaneously, but the general character of vegetation remains the same as in evergreen rainforests); 3) semievergreen forest: longer dry season (the upper tree story consists of deciduous trees, while the lower story is still evergreen).

**Ex. 6. Answer the questions.**

1) What is a forest? 2) How can forests be classified? 3) What types of forests are distinguished according to latitude? 4) Where do tropical forests occur? 5) What is the climate like in the regions of tropical forests? 6) What is the soil of tropical forests? 7) What plants are present in tropical forests? 8) How can tropical forests be further classified?

**Ex. 7. Complete the sentences?**

- 1) Forest can be classified ...
- 2) There are three major types of forests ...
- 3) The major characteristics of tropical forests are ...
- 4) Canopy in tropical forests is ...
- 5) Trees of tropical forests have ...
- 6) Fauna of tropical forests includes ...
- 7) Evergreen rainforest have no ...
- 8) Seasonal rainforest have ...
- 9) Semievergreen forest have ...

**Ex. 8. Speak about tropical forests.**

## Lesson 6

### Types of Forests: Temperate and Boreal Forests

#### *Active vocabulary:*

distinct – отличный, отчётливый  
distinguish – проводить различие, различать, распознавать  
dense – густой  
moderate – умеренный, средний  
beech – бук  
hemlock – болиголов (крапчатый)  
lime – липа  
poplar – тополь  
elm – вяз  
willow – ива  
deer – олень  
bobcat – рысь (рыжая)  
terrestrial – наземный  
woodpecker – дятел  
hawk – ястреб  
moose – лось  
weasel – ласка, горноста́й (и др. животные семейства куньих)  
lynx – рысь  
chipmunk – бурундук  
shrew – землеройка  
bat – летучая мышь  
logging – заготовка леса

**Ex. 1. What species from the *Active vocabulary* are common in Belarusian forests?**

**Ex. 2. Complete the following proverbs and sayings using the words from the *Active vocabulary*:**

- 1) A ... kills because it is his nature; a man because it is his pleasure.
- 2) Lawyers and ... have long bills.
- 3) If you are hunting for a red ... then ignore the hares. (Chinese proverb)
- 4) Grapes do not grow in a ... tree. (Bulgarian proverb)

5) No matter how fast the ... grows, it will never reach heaven.  
(Lebanese Proverb)

6) The ... comes to say "Happy New Year!" to the chickens.  
(Chinese proverb)

**Ex. 3. Match the words from the *Active vocabulary* to their definitions below:**

- having the constituent parts crowded closely together;
- the activity of cutting down trees in order to sell the wood;
- average in amount, intensity, quality, or degree, not radical;
- recognize or point out a difference;
- recognizably different in nature from something else of a similar type;
- living or growing on the ground or in the soil.

**Ex. 4. Complete the phrases with the words from the *Active vocabulary*.**

1) ... climate and a growing season of 140–200 days during 4–6 frost-free months distinguish temperate forests.

2) Canopy of temperate forests is moderately ... and allows light to penetrate.

3) Fauna of temperate forests is represented by squirrels, rabbits, birds, ..., ..., and black bear.

4) Trees of temperate forests are ... by broad leaves that are lost annually.

5) Boreal forests, or taiga, represent the largest ... biome.

6) Current extensive ... in boreal forests may soon lead to their disappearance.

**Ex. 5. Read the text.**

Temperate forests occur in eastern North America, northeastern Asia, and western and central Europe. Well-defined seasons with a distinct winter characterize this forest biome. Moderate climate and a growing season of 140–200 days during 4–6 frost-free months distinguish temperate forests.

Temperature varies from -30° C to 30° C. Precipitation (75–150 cm) is distributed evenly throughout the year. Soil is fertile, enriched with decaying litter. Canopy is moderately dense and allows light to



penetrate, resulting in well-developed and richly diversified understory vegetation and stratification of animals.

Flora is characterized by 3–4 tree species per square kilometer. Trees are distinguished by broad leaves that are lost annually and include such species as oak, beech, hemlock, maple, lime, poplar, elm, willow, and spring-flowering herbs.

Fauna is represented by squirrels, rabbits, birds, deer, bobcat, wolf, fox, and black bear.

Boreal forests, or taiga, represent the largest terrestrial biome. Occurring between 50 and 60 degrees north latitudes, boreal forests can be found in the broad belt of Eurasia and North America: two-thirds in Siberia with the rest in Scandinavia, Alaska, and Canada. Seasons are divided into short, moist, and moderately warm summers and long, cold, and dry winters. The length of the growing season in boreal forests is 130 days.

Temperatures are very low. Precipitation is primarily in the form of snow, 40–100 cm annually. Soil is thin, nutrient-poor, and acidic. Canopy permits low light penetration, and as a result, understory is limited.

Flora consist mostly of cold-tolerant evergreen conifers with needle-like leaves, such as pine, fir, and spruce. Fauna include woodpeckers, hawks, moose, bear, weasel, lynx, fox, wolf, deer, hares, chipmunks, shrews, and bats.

Current extensive logging in boreal forests may soon cause their disappearance.

#### **Ex. 6. Answer the questions.**

1) Where do temperate forests grow? 2) How long is the growing season of temperate forests? 3) What tree species grow in temperate forests? 4) What is the fauna of temperate forests represented by? 5) Where do boreal forests occur? 6) What are the seasons in boreal forests like? 7) What are soil characteristics in boreal forests? 8) What does flora of boreal forests consist of? 9) Why are now boreal forests in danger?

#### **Ex. 7. Complete the sentences.**

- 1) Temperate forests are characterized by ...
- 2) The soil in temperate forests is ...

- 3) Canopy in temperate forests is moderately dense and that is why ...
- 4) Flora in temperate forests is characterized by ...
- 5) Trees in temperate forests have ...
- 6) The largest terrestrial biome is ...
- 7) Seasons in boreal forests are divided into ...
- 8) The growing season in boreal forests is ...
- 9) Precipitation in boreal forests is ...
- 10) Understory in boreal forests is limited because ...

**Ex. 8. Speak about:**

- 1) Temperate forests.
- 2) Boreal forests.
- 3) Compare temperate and boreal forests.

## Lesson 7

### Benefits of Trees

#### *Active vocabulary:*

necessary – необходимый  
survival – выживание  
to breathe – дышать  
to moderate – ослаблять, смягчать  
to recycle – перерабатывать  
nourishment – питание  
to remove – удалять, забирать  
to provide – обеспечивать, предоставлять  
processed – переработанный  
fuel – топливо  
rubber – резина  
cork – пробка  
to support – поддерживать  
property – свойство

#### **Ex. 1. Find 6 words from the *Active vocabulary*.**

steprovidearemoveverysupportubreatherapyrecyclelessonecessary

#### **Ex. 2. Match the words to make phrases.**

necessary	property
to remove	from the list
to recycle	oxygen
chance	for our survival
to breath in	waste products
essential	the idea
processed	rubber
synthetic	timber
to support	for survival

#### **Ex. 3. Match the words from the *Active vocabulary* to their definitions below:**

- strong, waterproof, elastic substance made from the juice of a tropical tree or produced chemically;
- a substance that is burned to provide heat or power;

- return (material) to a previous stage in a cyclic process; use again;
- take (something) away or off from the position occupied;
- make available for use; supply;
- the food necessary for growth, health, and good condition;
- a soft, light substance which forms the bark of a type of Mediterranean tree;
- an attribute, quality, or characteristic of something;
- take air into the lungs and then expel it, esp. as a regular physiological process.

**Ex. 4. Complete the phrases with the words from the Active vocabulary.**

- 1) Trees are necessary for our ... .
- 2) As we ... in, our bodies take in oxygen.
- 3) Trees absorb a lot of water from the soil for ... .
- 4) In addition to being processed into products, trees are also cut down so their wood can be used as ... to cook food and heat homes.
- 5) The ... that you find on soles (подошва) of your shoes is made from sap that comes from a type of tree found in Brazil, India, China and Southeast Asia.
- 6) ... has the ability to contract when squeezed and then expand back out again.
- 7) Forests are communities full of organisms that depend on each other for ... .

**Ex. 5. Read the text.**

*Produce oxygen and absorb carbon dioxide.*

Trees are necessary for our survival. Through photosynthesis trees produce the gas that we cannot live without: oxygen (O<sub>2</sub>). As we breathe in, our bodies take in oxygen and when we breathe out, we release carbon dioxide (CO<sub>2</sub>). Trees do the opposite. They take in CO<sub>2</sub> and release O<sub>2</sub>. This cleans the air by removing harmful CO<sub>2</sub> so that people and animals can breathe.

*Moderate temperature and rainfall.*

Trees are like natural air conditioners and water pumps. They cool the earth by giving shade and recycling water. By cooling the air and ground around them, the shade from trees helps cool the earth's

temperature overall. Trees also help moderate the earth's rainfall, which also helps keep the temperature cooler.

Trees absorb a lot of water from the soil for nourishment. Later, when the sun shines on the trees, water is released from the leaves and absorbed back into the atmosphere – just like the water is absorbed from our bathing suits. When the sun's energy removes water from the earth's surface, the water collects into clouds, and when the clouds are heavy with water they release rain back to the earth.

*Provide food, medicine, shelter and warmth.*

Every day we use or eat something that has come from a tree. Think about the paper we write on, the pencils we use and the furniture we sit on – they all came from trees. The uses of wood are virtually endless. In addition to being processed into products, trees are also cut down so their wood can be used as fuel to cook food and heat homes.

But we don't always have to cut down a tree to be able to make something from it. The rubber that you find on soles of your shoes is made from sap that comes from a type of tree found in Brazil, India, China and Southeast Asia. Cork is the bark of the evergreen cork oak found in the Mediterranean region. Cork has the ability to contract when squeezed and then expand back out again. The evergreen cork oak is one of the few trees that does not die when its bark is removed.

What about the things we eat? How many different fruits or nuts can you think of that come from trees? And did you know that cinnamon (корица) comes from the bark of a tree that grows in India?

There are also many plants that have life-saving properties. Illnesses such as malaria, hypertension, heart disease and cancer are all treated with medicines made in part from plants.

*Support biodiversity.*

Forests are communities full of organisms that depend on each other for survival. We call these communities ecosystems. All parts of a forest ecosystem and the interactions between them are needed for the health and well-being of all. Forests offer food, water, shelter and protection for an incredible array of wildlife.

The term "biodiversity" is used to describe the variety of life. This variety is what an ecosystem depends on. It is helpful to think of an ecosystem as a woven carpet; if you pull on a loose thread, it might only affect the thread and those closest to it or it might unravel the whole carpet.

**Ex. 6. Answer the questions.**

1) Why are trees necessary for our survival? 2) How do trees clean the air? 3) What tree species grow in temperate forests? 4) How do trees cool the earth? 5) What do trees provide people with? 6) What properties do many plants have? 7) What illnesses are treated with medicines made in part from plants? 8) What do we call ecosystems? 9) What does an ecosystem depend on?

**Ex. 7. Complete the sentences.**

- 1) Through photosynthesis trees ...
- 2) Trees cool the earth by ...
- 3) Trees absorb water from the soil for ...
- 4) Trees are cut down so that ...
- 5) The rubber is made from ...
- 6) Cork is the ... and it has the ability ...
- 7) Cinnamon comes from ...
- 8) Forests are communities ...

**Ex. 8. Speak about the benefits of trees.**

## Lesson 8

### Threats to Our Forests

#### *Active vocabulary:*

harvesting – уборочные работы, уборка урожая;  
cash-crop – товарная культура, товарная часть урожая  
to include – включать  
to cause – вызывать, быть причиной  
threat – угроза  
flood – потоп, наводнение  
to allow – позволять  
to reach – доставать, достигать  
to remove – извлекать, удалять  
conditions – обстоятельства, условия  
to remain – оставаться  
drought – засуха  
to contain – включать, содержать  
vapour – пар, испарения, пары  
fossil fuel – ископаемое топливо  
to trap – захватывать  
extinction – исчезновение, вымирание  
to disturb – тревожить, беспокоить, нарушать

**Ex. 1. In the *Active vocabulary* find the synonyms to the words below.**

Danger, take away, let, fume, capture, stay

**Ex. 2. Match the words to make phrases.**

threat	of extinction
dangerous	a vapour
long	drought
to trap	acid rain
to emit	flood
to disturb	the light
weather	the lifecycle
to cause	conditions

**Ex. 3. Match the words from the *Active vocabulary* with their definitions below:**

- the process or period of gathering in crops;
- a crop produced for its commercial value rather than for use by the grower;
- the possibility of trouble, danger, or ruin;
- a long period of time during which no rain falls;
- tiny drops of water or other liquids in the air;
- the death of all remaining living members of a species of animal or plant.

**Ex. 4. Complete the phrases with the words from the *Active vocabulary*.**

- 1) Deforestation is a very real environmental ... .
- 2) The ... in this region have become unfriendly for forest growth.
- 3) When it rains heavily the water can no longer be absorbed by the soil and this can result in ... .
- 4) If the forests disappear, there will be less rain resulting in dryer conditions that eventually lead to ....
- 5) The earth's atmosphere ... a number of greenhouse gases.
- 6) Some greenhouse gases are carbon dioxide, methane and water ... .
- 7) Forests help ... large amounts of CO<sub>2</sub> from the air.
- 8) More CO<sub>2</sub> is produced than all the trees can absorb when ... are burned.

**Ex. 5. Read the text.**

*Deforestation.*

Forests are cleared all around the world for a number of reasons, including:

- harvesting of timber to produce wood and paper products;
- clearing land for farms, cash-crop plantations, and cattle ranching;
- clearing land for urban development, including homes and roads.

Forests are also being destroyed by acid rain resulting from our pollution-causing activities and through the introduction of disease and invasive species. Deforestation is a very real environmental threat. Our once vast forests are disappearing. All around the world, trees are being cut down too quickly for earth to regenerate new forests.



When forests are cleared floods and soil erosion take place. The roots of a tree make gaps in the soil so that when it rains the water can sink in before being absorbed by the soil. These spaces also allow air and water to reach the roots of the plants. When trees are removed using heavy machinery, the soil is pushed down and the gaps fill in and the conditions become unfriendly for new growth.

Because the soil no longer can absorb the water, when it rains the water remains on the top of the soil and this can result in floods. The moving water also can completely wash away the top layer of the soil. This is called soil erosion.

Each year about 24 billion tons of agricultural topsoil (the top layer of soil) wash or blow away.

#### *Drought.*

Forests help produce rainfall. The more trees, the more water gets absorbed into clouds and the more rain falls. If the forests disappear, there will be less rain resulting in dryer conditions that eventually lead to drought. Once this happens, the damage is extensive making it difficult to plant more trees or plants later because the soil is so hard and dry.

#### *Greenhouse gases and acid rain.*

The earth's atmosphere contains a number of greenhouse gases. Greenhouse gases trap the heat from the sun inside the atmosphere. Some greenhouse gases are carbon dioxide (CO<sub>2</sub>), methane and water vapour. We need these gases in small amounts, but they can be harmful at high levels.

Forests help remove large amounts of CO<sub>2</sub> from the air. They absorb the gas during photosynthesis. However, more CO<sub>2</sub> is produced than all the trees can absorb when fossil fuels are burned and when forests are cut down even less CO<sub>2</sub> is being absorbed leaving it trapped in the atmosphere.

As greenhouse gases build up, more of the sun's heat gets trapped and that can lead to climate change (the disruption of the delicate balance of the earth's ecosystems). The added pollution in the atmosphere can also lead to acid rain when the gases mix with water in clouds.

#### *Species extinction*

Another harmful result of deforestation is the extinction of animal and plant species. They disappear because their environment and life cycles have been disturbed and they are unable to adapt to the changes.

When species disappear, it is called extinction. Essential habitat is lost when forests are cut down; wildlife species lose their homes, their food sources and their place in the web of life. Even though extinction is part of life, it is happening far too quickly now. It is estimated that as many as 150–200 species around the world go extinct every day!

**Ex. 6. Answer the questions.**

- 1) For what reasons are forests cleared all around the world?
- 2) What other factors lead to the destruction of forests?
- 3) What happens when forests are cleared?
- 4) What is soil erosion?
- 5) What can lead to climate change?
- 6) What is acid rain?
- 7) What effect does deforestation have on animal species?
- 8) What do scientists say about the rate of extinction nowadays?

**Ex. 7. Complete the sentences.**

- 1) Forests are destroyed by acid rain resulting from ...
- 2) The roots of a tree make gaps in the soil that allows ...
- 3) Each year about 24 billion tons ...
- 4) The more trees, the more ...
- 5) The earth's atmosphere contains ...
- 6) The greenhouse gases are ...
- 7) Forests absorb CO<sub>2</sub> from the air during ...
- 8) As greenhouse gases build up ...
- 9) Another harmful result of deforestation is ...
- 10) Animal and plant species disappear because ...

**Ex. 8. Speak about:**

- 1) Deforestation and its effect on the environment.
- 2) Greenhouse gases and forests.
- 3) Deforestation and species extinction.

## Lesson 9

### Wild Fires

#### *Active vocabulary:*

wildfire – лесной пожар  
combustible – горючий, воспламеняемый  
wilderness – дикая природа; дикая местность; глухомань  
brush – густой кустарник  
peat – торф  
arson – поджог  
ignition – воспламенение, зажигание  
propagation – распространение  
prevention – предотвращение  
detection – определение, обнаружение  
suppression – подавление, гашение  
controversial – спорный, сомнительный  
permit – позволять, разрешать  
flammable – огнеопасный, легковоспламеняющийся  
remote – отдаленный

#### **Ex. 1. Translate the following words from Russian into English.**

Воспламенять, гасить, обнаруживать, распространять, предотвращать.

#### **Ex. 2. Match the words to make phrases.**

wildfire	chemicals
combustible	material
controversial	ignition
remote	prevention
the cause of	an arson
peat	fire
wilderness	region
flammable	area
to commit	method

#### **Ex. 3. Match the words from the *Active vocabulary* to their definitions below:**

- situated far from the main centres of population;

- a large, destructive forest- or brush-fire that spreads quickly;
- the criminal act of deliberately setting fire to property;
- decaying plant material which is found under the ground in some cool, wet regions;
- an uncultivated, uninhabited, and inhospitable region;
- the action of stopping something from happening;
- giving rise or likely to give rise to public disagreement;
- undergrowth, small trees, and shrubs;
- officially allow (someone) to do something.

**Ex. 4. Complete the phrases with the words from the Active vocabulary.**

- 1) A wildfire is an uncontrolled fire in an area of ... vegetation.
- 2) Fires can be accidental or they can be caused by ... .
- 3) ... take place all over the world.
- 4) Strategies of wildfire ..., ..., and ... have varied over the years.
- 5) One of the more ... techniques is controlled burning.
- 6) While some wildfires burn in ... forested regions, they can cause extensive destruction of homes and other property.

**Ex. 5. Read the text.**

A wildfire is an uncontrolled fire in an area of combustible vegetation that occurs in the countryside or a wilderness area. Other names such as brush fire, bush fire, forest fire, desert fire, grass fire, hill fire, peat fire, and vegetation fire may be used to describe the same phenomenon depending on the type of vegetation being burned. When a heat wave or drought dries out the plants in an area, a fire can start and spread quickly. Fires can be accidental or they can be caused by arson or even lightning strikes. Forest fires happen mainly in the summer and autumn. They are particularly destructive when there is a drought because branches and twigs die and dry out, creating plenty of fuel for the fire. Wind is a major factor. Some fires spread along the dead leaves and branches at the bottom of trees. Some fires spread when the leafy canopy catches fire. Also, burning leaves and branches can get blown ahead of the main fire causing smaller fires to start.

A wildfire differs from other fires by its extensive size, the speed at which it can spread out from its original source, its potential to change direction unexpectedly, and its ability to jump gaps such as roads, rivers

and fire breaks. Wildfires are characterized in terms of the cause of ignition, their physical properties such as speed of propagation, the combustible material present, and the effect of weather on the fire.

Wild fires take place all over the world. Major fires happen every few years in the forests of the United States and Indonesia, and in the bush in Australia.

Fossil records and human history contain accounts of wildfires, as wildfires can occur in periodic intervals. Wildfires can cause extensive damage, both to property and human life, but they also have various beneficial effects on wilderness areas. Some plant species depend on the effects of fire for growth and reproduction, although large wildfires may also have negative ecological effects.

Strategies of wildfire prevention, detection, and suppression have varied over the years, and international wildfire management experts encourage further development of technology and research. Usually to suppress fire planes and helicopters drop water and chemical fire retardant. Fire-fighters create a control line – an area where they remove all the fuel so that the fire can't travel across it. This can be a barrier like a river or road. They then cut down dead trees to stop them falling across the fire line. One of the more controversial techniques is controlled burning: permitting or even igniting smaller fires to minimize the amount of flammable material available for a potential wildfire. While some wildfires burn in remote forested regions, they can cause extensive destruction of homes and other property located in the wildland-urban interface: a zone of transition between developed areas and undeveloped wilderness.

**Ex. 6. Answer the questions.**

1) What is a wildfire? 2) What can fires be caused by? 3) When do forest fires happen mainly? 4) When are fires particularly destructive? 5) How do fires spread? 6) What makes a wildfire different from other fires? 7) Where do major fires happen? 8) Can wildfires have beneficial effect? 9) What measures are usually taken to suppress fire? 10) What technique of wildfire prevention is considered controversial?

**Ex. 7. Complete the sentences.**

1) Depending on the type of vegetation being burned fires can be described as ...

- 2) Forest fires are particularly destructive when ...
- 3) A wildfire differs from other fires by ...
- 4) Wildfires are characterized in terms of ...
- 5) Wildfires can have various beneficial effects on wilderness area, for example ...
- 6) To suppress fire fire-fighters create ...
- 7) One of the more controversial techniques is ...

**Ex. 8. Speak about:**

- 1) Wildfires.
- 2) Strategies of wildfire prevention.

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Гомель  
2015

РЕПОЗИТОРИЙ ГГУ ИМЕНИ Ф. СКОРИНЫ